

## **ANALYSIS OF AUSCULTATORY SOUNDS USING SINGLE VALUE DECOMPOSITION**

### **ABSTRACT**

Techniques are described for analyzing auscultatory sounds to aid a medical professional in diagnosing physiological conditions of a patient. A data analysis system, for example, applies singular value decomposition to auscultatory sounds associated known physiological conditions to define a set of one or more disease regions within a multidimensional space. A diagnostic device, such as an electronic stethoscope or personal digital assistant, applies configuration data from the data analysis system to generate a set of one or more vectors within the multidimensional space representative of auscultatory sounds associated with a patient. The diagnostic device outputs a diagnostic message associated with a physiological condition of the patient based on the orientation of the vectors relative to the disease regions within the multidimensional space.